

The 1996 NASA Aerospace Battery Workshop

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> Proceedings of a workshop sponsored by the NASA Aerospace Flight Battery Systems Program and held in Huntsville, Alabama December 3–5, 1996

National Aeronautics and Space Administration Marshall Space Flight Center • MSFC, Alabama 35812

Preface

This document contains the proceedings of the 29th annual NASA Aerospace Battery Workshop, hosted by the Marshall Space Flight Center on December 3-5, 1996. The workshop was attended by scientists and engineers from various agencies of the U.S. Government, aerospace contractors, and battery manufacturers, as well as international participation in like kind from a number of countries around the world.

The subjects covered included nickel-cadmium, nickel-hydrogen, silver-zinc, nickel-metal hydride, and lithium- based technologies.

Introduction

The NASA Aerospace Battery Workshop is an annual event hosted by the Marshall Space Flight Center. The workshop is sponsored by the NASA Aerospace Flight Battery Systems Program which is managed out of NASA Lewis Research Center and receives support in the form of overall objectives, guidelines, and funding from Code AE / Code S, NASA Headquarters.

The 1996 Workshop was held on three consecutive days and was divided into five sessions. The first day consisted of a General / Primary Battery Session and a Nickel-Hydrogen Battery On-Orbit Reconditioning Experience Focused Session. The second day consisted of a Nickel-Hydrogen Session and a Nickel-Cadmium Session. The third and final day was devoted to an Other Secondary Technologies Session which covered sodium-sulfur, nickel-zinc, nickel-metal hydride, and lithium ion technologies.

On a personal note, I would like to take this opportunity to thank all of the many people that contributed to the organization and production of this workshop:

The NASA Aerospace Flight Battery Systems Program, for their financial support as well as their input during the initial planning stages of the workshop.

Bob Bechtel and **Eric Lowery**, NASA Marshall Space Flight Center; **Gopal Rao**, NASA Goddard Space Flight Center; **Harry Brown**, Naval Surface Warfare Center, Crane Division; and **Doug Hafen**, Lockheed Martin, for serving as Session Organizers, which involved soliciting presentations, organizing the session agenda, and orchestrating the session during the workshop;

Huntsville Hilton, for doing an outstanding job in providing an ideal setting for this workshop and for the hospitality that was shown to all who attended;

Marshall Space Flight Center employees, for their help in stuffing envelopes, registering attendees, handling the audience microphones, and flipping transparancies during the workshop.

Finally, I want to thank all of you that attended and/or prepared and delivered presentations for this workshop. You were the key to the success of this workshop.

Jeff Brewer NASA Marshall Space Flight Center

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